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# 2013 MICHIGAN SPRING TURKEY HUNTER SURVEY

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## ABSTRACT

*A survey of turkey hunters was conducted following the 2013 spring hunting season to determine turkey harvest and hunter participation. In 2013, about 82,621 hunters harvested about 31,931 turkeys. Statewide, 39% of hunters harvested a turkey. Nearly 68% of the hunters rated their hunting experience as excellent, very good, or good in 2013. About 90% of the hunters reported they experienced no or only minor interference from other hunters. The number of hunters, their hunting effort, harvest, and hunter success were not significantly different between 2012 and 2013. However, hunter satisfaction in 2013 increased significantly from 2012 (68% versus 65%).*

## INTRODUCTION

Michigan's spring turkey (*Meleagris gallopavo*) hunting season was based originally on an area and quota system. This system was set up primarily to distribute hunters across geographic areas (management units) and time (hunt periods). As the turkey population has expanded statewide, license types were created that allowed hunters to hunt in multiple management units. The goal of the current system has been to provide hunting opportunities while maintaining acceptable levels of hunter satisfaction (Luukkonen 1998).

In 2013, nearly the entire state was open for wild turkey hunting from April 22 through May 31 (Figure 1). The area open for turkey hunting (58,114 square miles) was the same as last year. The statewide hunting area was divided into 12 management units (Figure 1). Hunting licenses were available on these management units for three types of hunts: (1) quota [limited licenses available] hunts on both public and private lands in a specific management unit, (2) quota hunt on private lands in southern Michigan [Hunt 301 in Unit ZZ], and (3) a guaranteed hunt (no quota) that included all units [Hunt 234], but excluded public lands in the Southern Lower Peninsula (SLP).



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People interested in obtaining a turkey hunting license could enter into a random drawing (lottery) conducted by the Department of Natural Resources (DNR) or purchase a license for Hunt 234 between January 1 and May 1 without going through the lottery. Each applicant in the lottery could select up to two hunt choices (any combination of quota and unlimited quota hunts). The lottery consisted of two drawings. The first drawing was used to select applicants based on their preferred hunt choice. The second drawing was among applicants who were not successful in the first drawing, and was based on the hunter's second choice for a hunt. Any licenses available after the drawing was completed were made available on a first-come, first-served basis to applicants that were unsuccessful in the drawing. Unsuccessful applicants could purchase one leftover license or a license for Hunt 234. Beginning one week after licenses were available to unsuccessful applicants, all remaining licenses except licenses for Hunt 234 were made available to nonapplicants. After May 1, Hunt 234 was available for purchase only to applicants. Hunters were allowed to purchase one license and take one bearded turkey with the harvest tag issued with their license.

A limited number of licenses were available for quota hunts, and they were valid only in a certain management unit and only during a limited time period (7-40 days). Most quota hunts began before May 6 and lasted for seven days. A private land management unit (Unit ZZ) was created in 2002 that included all private lands in southern Michigan (Figure 1). Hunters who selected Hunt 301 could hunt the first two weeks of the season (April 22-May 5) anywhere on private lands in Unit ZZ. This unit and hunt period was created to provide additional hunting opportunity and increased flexibility for hunters who had difficulty finding time to hunt during shorter quota hunts.

Licenses for Hunt 234 could be used in any management unit. They were valid on public and private lands, except in Unit ZZ, where they were only valid on private lands or on Fort Custer military lands. Hunt 234 started later than most quota hunts but lasted for 26 days (May 6-31). An unlimited number of licenses were available for Hunt 234.

The Pure Michigan Hunt (PMH) was a unique multi-species hunting opportunity offered for the first time in 2012. Individuals could purchase an unlimited number of applications for the PMH. Three individuals were randomly chosen from all applications, and winners received elk, bear, spring turkey, fall turkey, and antlerless deer hunting licenses and could participate in a reserved waterfowl hunt on a managed waterfowl area. The turkey hunting licenses were valid for all areas open for hunting turkey and during all turkey hunting periods. Furthermore, the PMH license holder could hunt any season until their turkey harvest tag was filled.

A mentored youth hunting program started in 2012. Under this program, a mentored youth hunting license was created and could be purchased by youth hunters aged 9 and younger. The youth hunter had to participate with a mentor who was at least 21 years old. The mentored youth hunting license allowed the youth hunter to hunt small game, turkey, deer, trap furbearers, and fish for all species. A turkey kill tag issued under the mentored youth hunting license was valid for one turkey during any hunt period, in any open hunt unit, on private or public land. No application was required to purchase the mentored youth license.

Hunters could use a bow and arrow, crossbow, or shotgun with number 4 or smaller shot (including a muzzleloading shotgun) to hunt turkeys. Hunters using a crossbow were required to obtain a free crossbow stamp, except hunters with a disability already hunting under a DNR-issued crossbow permit, did not need the stamp.

The DNR and the Natural Resources Commission have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are a management tool used by the Wildlife Division to accomplish its statutory responsibility. Estimating harvest, hunting effort, and hunter satisfaction are the primary objectives of this survey.

## **METHODS**

The Wildlife Division provided all hunters the option to report voluntarily information about their turkey hunting activity via the internet. This option was advertised in the hunting regulation booklet and through a statewide news release. Hunters could report information anytime during the hunting season. Hunters reported whether they hunted, the days spent afield, whether they harvested a turkey, type of device used while hunting (i.e., firearm, crossbow, or bow and arrow), and whether other hunters caused interference during their hunt (none, minor, some irritation, or major problem). Successful hunters were also asked to report where their turkeys were taken (public or private land), date of harvest, and beard length of the harvested bird. Birds with a beard less than six inches were classified as juveniles (one year old), while birds with longer beards were adults (two years old or greater; Kelly, 1975). Finally, hunters were asked to rate their overall hunting experience (excellent, very good, good, fair, or poor), and indicate the status of the turkey population in their hunting area (increasing, decreasing, stable, or unknown).

Following the 2013 spring turkey hunting season, a questionnaire was sent to 13,937 randomly selected people that had purchased a turkey hunting license (resident turkey, senior resident turkey, nonresident turkey, mentored youth, and Pure Michigan hunting licenses) and had not already voluntarily reported harvest information via the internet. Hunters receiving the questionnaire were asked to report the same information that was collected from hunters that reported voluntarily on the internet.

Estimates were calculated using a stratified random sampling design that included 17 strata (Cochran 1977). Hunters were stratified based on the management unit where their license was valid (12 management units). Hunters who purchased a license that could be used in multiple management units (mentored youth hunters, PMH license holders, and licenses for hunts 234 and 301) were treated as separate strata (strata 13-16). Moreover, people that had voluntarily reported information about their hunting activity via the internet were treated as a separate stratum (seventh stratum).

A 95% confidence limit (CL) was calculated for each estimate. This CL could be added to and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval was a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100. Estimates were

based on information collected from random samples of hunting license buyers. Thus, these estimates were subject to sampling errors (Cochran 1977). Estimates were not adjusted for possible response or nonresponse biases.

Statistical tests are used routinely to determine the likelihood that differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals was equivalent to stating the difference between the means was larger than would be expected 995 out of 1,000 times ( $P < 0.005$ ), if the study had been repeated (Payton et al. 2003).

Questionnaires were mailed initially during early July 2013, and nonrespondents were mailed up to two follow-up questionnaires. Although 13,937 people were sent the questionnaire, 203 surveys were undeliverable resulting in an adjusted sample size of 13,734. Questionnaires were returned by 8,343 people, yielding a 61% adjusted response rate. In addition, 2,196 people voluntarily reported information about their hunting activity via the internet before the random sample was selected.

## **RESULTS AND DISCUSSION**

In 2013, licenses were purchased by 104,279 people, an increase of nearly 2% from 2012 (Table 1). Most of the people buying a license were males (92%), and the average age of the license buyers was 44 years (Figure 2). Nearly 12% (12,656) of the license buyers were younger than 17 years old. Mentored youth hunting licenses were purchased by 2,711 youths.

The number of people buying a turkey hunting license in 2013 decreased by about 3% in ten years from 2003 (107,866 people purchased a license in 2003). There were fewer license buyers for age classes between 25 and 50 years of age in 2013, compared to 2003 (Figure 3). However, there were increased hunter numbers among the youngest and oldest age classes in 2013. The increased hunter numbers in the oldest age classes likely represented the rising share of older people in the population as the baby-boom generation aged and life expectancies have increased. The increased participation among the youngest hunters reflected the lowering of the minimum age requirements. In 2013, there was no minimum age limit to hunt turkeys; while hunters had to be at least 12 years old to participate in 2003.

About 79% ( $\pm 1\%$ ) of license buyers hunted turkeys (82,621 hunters). Most of these hunters were males ( $76,360 \pm 1,009$ ), although nearly 8% ( $\pm 1\%$ ) of the hunters were females ( $6,261 \pm 532$ ). Estimated hunter numbers (Table 2) were similar in 2012 and 2013 (82,297 versus 82,621 hunters). Counties listed in descending order with more than 2,200 hunters afield included Allegan, Kent, Newaygo, Montcalm, Jackson, and Sanilac (Table 3).

Hunters spent an estimated 341,113 days afield pursuing turkeys ( $4.1 \pm 0.1$  days/hunter), and harvested approximately 31,931 birds (Figure 4). Counties listed in descending order with hunters taking more than 900 turkeys included Kent, Montcalm, Ottawa, and Jackson (Table 3). Hunter effort and harvest in 2013 were not

significantly different from 2012. Hunter success was 39% in 2013, which was not significantly different from the 38% hunter success experienced in 2012.

About 25% ( $\pm 2\%$ ) of the harvested birds were juvenile males ( $8,108 \pm 604$ ); 73% ( $\pm 2\%$ ) were adult males ( $23,334 \pm 935$ ), and about 1% were bearded females ( $291 \pm 112$ ). Additionally, the age of a small number of harvested birds ( $<1\%$ ) was unknown ( $199 \pm 107$ ) because hunters failed to report a beard length.

Hunting effort and the number of turkeys harvested were generally highest during the earliest hunting periods (Figures 5-8). For turkeys that the harvest date was known, 44% of these birds were taken during the first seven days (April 22-28). Daily hunter success generally was more than 8% during April 22 through May 9. Daily hunter success was generally below 8% during May 10-31. Hunting effort and harvest generally was greater on the weekends than weekdays.

About 86% of turkey hunters hunted solely on private land; 8% hunted on public land only; and 5% hunted on both private and public lands (Table 4). Of the 31,931 turkeys harvested in 2013,  $90 \pm 1\%$  were taken on private land ( $28,572 \pm 993$  birds). About  $10 \pm 1\%$  of the harvest ( $3,285 \pm 384$  birds) was taken on public land.

Seventeen percent of turkey hunters believed turkey numbers were increasing in their hunting area (Table 5); while, 43% thought turkey numbers were stable, 23% thought turkey were decreasing; 17% of turkey hunters were uncertain about the status of turkeys; and 1% did not comment on the status of turkey.

Hunter satisfaction is one measure used to assess the turkey management program in Michigan. Of the estimated 82,621 people hunting turkeys in 2013,  $68 \pm 1\%$  of the hunters rated their hunting experience as either excellent ( $16,178 \pm 806$  hunters), very good ( $17,424 \pm 839$ ), or good ( $22,933 \pm 943$ ) (Table 6). Nearly  $18 \pm 1\%$  of the hunters rated their experience as fair ( $15,140 \pm 818$  hunters). Only  $12 \pm 1\%$  of the hunters rated their experience as poor ( $10,023 \pm 684$  hunters). About 1% of the hunters ( $924 \pm 219$  hunters) failed to rate their hunting experience.

Hunter satisfaction is affected by many factors such as hunting success and whether hunting activities were completed without interference (Luukkonen 1998). In 2013,  $71 \pm 1\%$  of the hunters reported no hunter interference;  $19 \pm 1\%$  reported minor interference;  $7 \pm 1\%$  reported some irritation caused by hunter interference; and  $2 \pm 1\%$  reported hunter interference was a major problem (Table 7).

Although interference can affect hunter satisfaction, hunter satisfaction was more closely associated with hunter success (Figures 9 and 10). Hunter success was greatest for hunts beginning April 22; however, satisfaction varied little among the hunt periods (Table 8).

Compared to 2012, hunter numbers, hunter effort, and harvest statewide in 2013 were not significantly different (Table 9). In addition, hunter success and the proportion of hunters that indicated they experienced no or only minor interference with another

hunter were similar in both 2012 and 2013 (Table 10). However, statewide hunter satisfaction increased significantly in 2013.

Most hunters ( $91 \pm 1\%$ ) used firearms while hunting turkeys, although  $7 \pm 1\%$  of the hunters used archery equipment (compound, recurve, or long bows), and  $5 \pm 1\%$  used a crossbow. Most hunters ( $94 \pm 1\%$ ) used a firearm to harvest their turkeys, while  $3 \pm 1\%$  used archery equipment, and  $3 \pm 1\%$  used a crossbow. About 39% of hunters using a firearm harvested a turkey, while 22% of hunters using a crossbow took a turkey, and 18% of hunters using another type of bow (longbows, recurve, or compound bows) took a turkey (Table 11).

Hunters using a crossbow to hunt turkeys were required to obtain a crossbow stamp, unless they were a disabled hunter that already had a DNR-issued crossbow permit. About  $37 \pm 5\%$  of the turkey hunters using a crossbow had obtained the crossbow stamp.

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Table 1. Number of hunting licenses available and people applying for licenses during the 2013 Michigan spring turkey hunting season.

Management unit or hunt period	Licenses available (quota)	Number of eligible applicants <sup>a</sup>	Number of applicants successful in drawing	Number of licenses remaining after drawing	Number of licenses purchased by successful applicants <sup>b</sup>	Number of licenses purchased by unsuccessful applicants <sup>b</sup>	Number of licenses purchased by people not in the drawing <sup>b</sup>	Number of licensees <sup>b</sup>
A	5,500	1,747	1,762	3,738	1,266	2	973	2,241
E	1,700	1,834	1,700	0	1,226	6	2	1,234
F	5,000	3,156	3,153	1,847	2,335	2	530	2,867
J	4,000	1,558	1,587	2,413	1,189	0	692	1,881
K	8,500	8,866	8,383	117	6,275	25	86	6,386
M	8,000	1,039	1,050	6,950	784	0	3,730	4,514
ZA	4,800	1,853	1,883	2,917	1,411	1	1,612	3,024
ZB	1,750	922	893	857	666	3	517	1,186
ZC	2,400	1,329	1,298	1,102	927	3	827	1,757
ZD	40	77	40	0	19	0	0	19
ZE	2,000	1,737	1,450	550	1,036	45	406	1,487
ZF	5,600	1,923	1,947	3,653	1,489	2	2,504	3,995
Hunt 234	NA	318	480	NA	965	128	39,574	40,667
Hunt 301	65,000	7,772	7,859	57,141	6,575	82	23,661	30,318
Pure MI Hunts	3	NA	NA	NA	NA	NA	NA	3
Mentored Hunts	NA	NA	NA	NA	NA	NA	NA	2,700
Statewide	114,293	34,131	33,485	81,285	26,163	299	75,114	104,279

<sup>a</sup>Number of eligible applicants selecting the management unit as their first choice to hunt.

<sup>b</sup>If a licensee purchased more than one license, only the latest purchase is included in the summary of licenses purchased.

Table 2. Number of hunters, hunting efforts, harvest, hunter success, hunter satisfaction, and hunter interference during the spring 2013 Michigan turkey hunting season.

Management unit	Hunters <sup>a</sup>		Hunting efforts (days) <sup>a</sup>		Harvest <sup>a</sup>		Hunter success		Hunter satisfaction <sup>b</sup>		Noninterfered hunters <sup>c</sup>	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunt periods with quotas (General limited quota hunt periods)												
A	1,963	91	7,615	675	627	121	32	6	52	6	94	3
E	1,113	43	3,543	268	411	66	37	6	65	6	93	3
F	2,504	110	8,586	624	559	127	22	5	55	6	89	4
J	1,583	85	5,521	480	537	103	34	6	68	6	91	4
K	5,566	254	18,670	1,560	1,977	343	36	6	56	6	88	4
M	3,422	242	17,401	2,479	1,050	236	31	7	55	7	91	4
ZA	2,517	141	8,659	1,002	877	169	35	6	72	6	89	4
ZB	1,014	54	3,625	414	341	68	34	6	70	6	86	5
ZC	1,305	102	4,900	671	434	99	33	7	68	7	81	6
ZD	18	1	96	17	2	1	13	5	50	8	81	6
ZE	1,246	70	4,102	430	498	89	40	7	79	6	84	5
ZF	3,128	212	14,353	2,072	1,088	225	35	7	70	7	88	5
Pure MI Hunt	3	0	6	0	3	0	100	0	100	0	100	0
Subtotal	25,382	486	97,077	3,978	8,406	566	33	2	63	2	89	1
Hunt period 301 with quota (Private lands in Management Unit ZZ; April 22-May 5, 2013)												
ZA	6,562	474	23,325	2,129	3,044	343	46	4	79	3	91	2
ZB	2,722	329	10,633	1,663	1,255	228	46	6	77	5	88	4
ZC	4,038	391	15,398	1,884	1,885	276	47	5	75	5	88	3
ZD	409	133	1,529	615	168	85	41	16	88	11	90	10
ZE	6,630	475	23,973	2,222	3,051	343	46	4	73	4	90	2
ZF	5,878	455	23,664	2,318	2,867	335	49	4	74	4	90	3
Unknown	570	158	2,444	892	64	53	11	9	53	14	89	9
Subtotal	26,268	395	100,965	3,298	12,335	564	47	2	75	2	90	1

<sup>a</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for hunts 234 and 301. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

<sup>b</sup>Proportion of hunters that rated their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.



Table 2 (continued). Number of hunters, hunting efforts, harvest, hunter success, hunter satisfaction, and hunter interference during the spring 2013 Michigan turkey hunting season.

Management unit	Hunters <sup>a</sup>		Hunting efforts (days) <sup>a</sup>		Harvest <sup>a</sup>		Hunter success		Hunter satisfaction <sup>b</sup>		Noninterfered hunters <sup>c</sup>	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Unlimited quota hunt period (Guaranteed Hunt 234; May 6-31, 2013)												
A	538	171	2,555	1,006	117	79	22	13	40	16	88	10
E	1,479	281	5,723	1,464	507	165	34	9	64	9	95	4
F	1,789	308	8,690	1,953	357	140	20	7	49	9	94	4
J	969	227	4,239	1,362	366	140	38	11	64	11	92	7
K	6,344	545	29,472	3,507	2,042	326	32	4	64	5	90	3
M	269	119	1,470	1,005	87	67	32	21	50	22	100	0
ZA	5,482	513	24,223	3,090	2,245	342	41	5	71	5	92	3
ZB	1,754	307	7,555	1,687	707	197	40	9	68	8	94	4
ZC	2,284	345	10,315	2,009	660	188	29	7	73	7	96	3
ZD	241	115	1,070	600	111	79	46	24	87	16	93	12
ZE	4,340	462	17,939	2,444	1,911	315	44	6	75	5	92	3
ZF	4,259	461	20,478	3,164	1,403	272	33	5	71	5	91	3
Unknown	602	183	2,305	1,109	95	73	13	10	37	15	76	13
Subtotal	28,985	684	136,034	6,058	10,608	657	37	2	67	2	92	1

<sup>a</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for hunts 234 and 301. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

<sup>b</sup>Proportion of hunters that rated their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 2 (continued). Number of hunters, hunting efforts, harvest, hunter success, hunter satisfaction, and hunter interference during the spring 2013 Michigan turkey hunting season.

Management unit	Hunters <sup>a</sup>		Hunting efforts (days) <sup>a</sup>		Harvest <sup>a</sup>		Hunter success		Hunter satisfaction <sup>b</sup>		Noninterfered hunters <sup>c</sup>	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Mentored hunts (youth hunters nine years old and younger could hunt during any open season)												
A	41	15	87	37	8	7	19	15	69	18	94	9
E	74	21	288	121	8	7	10	9	76	12	90	9
F	51	17	148	59	15	10	30	16	85	12	85	12
J	60	18	245	94	14	9	23	13	83	12	96	6
K	301	40	949	153	64	19	21	6	73	6	93	4
M	79	21	293	106	18	10	23	11	68	13	94	7
ZA	407	45	1,366	206	140	28	34	6	76	5	91	3
ZB	162	30	536	128	49	17	31	9	81	8	97	3
ZC	280	39	875	151	78	21	28	6	82	6	88	5
ZD	20	11	64	39	3	4	13	18	63	26	100	0
ZE	297	40	1,021	184	98	24	33	7	83	5	91	4
ZF	299	40	1,131	204	86	22	29	6	80	6	94	3
Unknown	20	11	36	26	3	4	13	18	38	26	63	26
Subtotal	1,986	56	7,037	373	583	52	29	2	78	2	92	2
Statewide	82,621	929	341,113	7,972	31,931	1,036	39	1	68	1	90	1

<sup>a</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for hunts 234 and 301. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

<sup>b</sup>Proportion of hunters that rated their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3. Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2013 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters <sup>a</sup>		Hunting efforts (days) <sup>a</sup>		Harvest <sup>a</sup>		Hunter success		Hunter satisfaction <sup>b</sup>		Noninterfered hunters <sup>c</sup>	
	95%		95%		95%		95%		95%		95%	
	Total	CL	Total	CL	Total	CL	%	CL	%	CL	%	CL
Alcona	999	193	3,641	883	237	94	24	8	52	10	90	6
Alger	139	90	959	732	78	71	56	32	73	27	96	4
Allegan	2,764	366	11,949	2,226	893	215	32	7	69	6	87	5
Alpena	671	148	2,721	811	237	91	35	11	46	12	94	7
Antrim	648	146	2,349	673	253	95	39	12	72	11	94	6
Arenac	513	132	1,490	466	205	79	40	13	64	13	94	6
Baraga	20	37	7	0	1	0	5	9	100	0	100	0
Barry	2,048	318	9,583	2,052	615	174	30	7	71	7	89	5
Bay	560	164	2,227	803	214	102	38	14	57	15	84	11
Benzie	424	171	1,091	481	168	112	40	20	80	17	88	15
Berrien	1,083	233	4,409	1,294	450	147	42	11	72	10	96	4
Branch	823	192	3,398	968	365	128	44	12	78	10	89	7
Calhoun	1,739	286	5,974	1,271	880	201	51	8	76	7	86	6
Cass	905	208	4,771	1,606	289	113	32	11	73	10	89	7
Charlevoix	518	139	1,717	710	215	91	41	14	64	13	86	10
Cheboygan	431	114	1,716	521	121	60	28	12	60	14	86	10
Chippewa	237	125	961	670	61	64	26	24	42	27	100	0
Clare	1,091	198	4,027	979	323	112	30	9	62	9	92	5
Clinton	1,341	249	4,510	1,056	428	140	32	9	70	9	87	6
Crawford	666	164	2,748	848	142	79	21	10	54	13	91	7
Delta	705	204	2,943	1,163	254	126	36	15	56	15	92	9

<sup>a</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

<sup>b</sup>Proportion of hunters that rated their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2013 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters <sup>a</sup>		Hunting efforts (days) <sup>a</sup>		Harvest <sup>a</sup>		Hunter success		Hunter satisfaction <sup>b</sup>		Noninterfered hunters <sup>c</sup>	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Dickinson	545	182	2,442	1,282	124	90	23	15	50	18	86	13
Eaton	1,254	244	4,477	1,080	537	161	43	10	75	9	97	3
Emmet	362	115	1,247	574	156	78	43	16	89	10	98	4
Genesee	1,667	266	6,822	1,326	644	163	39	8	76	7	90	5
Gladwin	1,048	193	3,801	942	393	121	37	9	70	9	95	4
Gogebic	175	108	1,172	830	21	37	12	20	57	31	99	0
Gd. Traverse	915	249	3,477	1,113	246	132	27	12	55	14	90	9
Gratiot	1,320	248	5,046	1,275	565	163	43	9	72	9	93	5
Hillsdale	1,633	272	5,984	1,281	824	194	50	8	77	7	83	6
Houghton	3	0	6	0	2	0	67	0	100	0	100	0
Huron	1,419	234	5,414	1,135	611	161	43	8	70	8	84	6
Ingham	1,321	242	4,432	1,035	576	159	44	9	74	8	87	6
Ionia	1,428	255	4,951	1,073	532	156	37	9	74	8	91	5
Iosco	744	176	2,566	736	195	93	26	11	45	12	90	7
Iron	510	175	2,669	1,336	150	97	29	16	57	18	92	10
Isabella	1,392	252	4,581	1,073	686	176	49	9	81	7	95	4
Jackson	2,307	311	8,470	1,471	931	204	40	7	68	6	92	3
Kalamazoo	1,207	246	4,704	1,252	473	152	39	10	74	9	86	7
Kalkaska	799	228	2,617	890	210	119	26	13	54	14	85	10
Kent	2,554	340	10,300	2,028	1,062	219	42	7	77	6	93	4
Keweenaw	1	0	5	0	0	0	0	0	100	0	100	0

<sup>a</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

<sup>b</sup>Proportion of hunters that rated their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2013 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters <sup>a</sup>		Hunting efforts (days) <sup>a</sup>		Harvest <sup>a</sup>		Hunter success		Hunter satisfaction <sup>b</sup>		Noninterfered hunters <sup>c</sup>	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Lake	1,384	303	4,929	1,312	196	116	14	8	40	11	89	7
Lapeer	2,200	304	8,004	1,487	864	192	39	7	75	6	92	4
Leelanau	421	173	1,636	890	113	94	27	19	68	19	85	16
Lenawee	1,038	208	3,462	851	330	116	32	9	74	9	88	7
Livingston	1,437	235	5,297	1,217	569	148	40	8	74	7	90	5
Luce	0	0	0	0	0	0	0	0	0	0	0	0
Mackinac	22	37	197	371	0	0	0	0	100	0	100	0
Macomb	668	176	2,712	1,008	248	106	37	13	76	11	89	8
Manistee	931	248	3,904	1,317	266	136	29	12	67	13	89	8
Marquette	302	137	1,188	733	42	52	14	16	46	23	93	12
Mason	907	251	2,920	933	257	136	28	13	47	14	94	7
Mecosta	1,014	252	3,811	1,194	502	180	49	13	68	12	93	7
Menominee	880	222	4,078	1,363	342	147	39	13	61	13	89	9
Midland	1,111	225	3,904	950	493	152	44	10	75	9	95	4
Missaukee	616	205	2,437	949	192	108	31	15	59	17	88	11
Monroe	568	161	2,229	762	197	96	35	14	83	10	90	8
Montcalm	2,331	324	8,223	1,514	1,037	222	45	7	76	6	91	4
Montmorency	640	141	2,686	737	118	59	18	9	46	12	91	7
Muskegon	1,412	265	6,101	1,458	601	170	43	9	69	9	91	5
Newaygo	2,479	386	10,200	2,064	804	226	32	8	61	8	88	6
Oakland	1,472	229	5,208	1,057	525	139	36	8	71	8	84	6

<sup>a</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

<sup>b</sup>Proportion of hunters that rated their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2013 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters <sup>a</sup>		Hunting efforts (days) <sup>a</sup>		Harvest <sup>a</sup>		Hunter success		Hunter satisfaction <sup>b</sup>		Noninterfered hunters <sup>c</sup>	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Oceana	1,026	256	3,903	1,245	443	168	43	13	65	12	90	8
Ogemaw	1,008	199	3,516	855	236	96	23	9	59	10	90	6
Ontonagon	176	109	1,266	1,093	39	52	22	26	45	32	100	0
Osceola	867	237	2,596	853	250	129	29	13	71	13	82	11
Oscoda	695	172	2,824	862	108	69	16	9	41	13	88	8
Otsego	589	141	2,327	818	174	82	29	12	65	12	95	5
Ottawa	1,992	309	7,747	1,602	933	212	47	8	73	7	88	5
Presque Isle	618	138	2,486	648	236	86	38	12	56	12	94	6
Roscommon	899	195	3,703	1,080	151	80	17	8	59	11	89	7
Saginaw	1,917	295	7,041	1,385	757	187	39	8	73	7	93	4
St. Clair	1,983	293	8,286	1,552	756	181	38	7	73	7	90	5
St. Joseph	1,104	233	4,151	1,149	556	164	50	11	78	9	96	4
Sanilac	2,227	314	8,779	1,537	869	197	39	7	73	6	90	4
Schoolcraft	61	61	165	153	40	52	66	44	66	44	92	12
Shiawassee	1,416	255	5,588	1,227	479	145	34	9	73	8	88	6
Tuscola	2,046	278	7,313	1,336	860	182	42	7	73	6	92	4
Van Buren	1,344	255	5,148	1,300	599	170	45	10	71	9	92	5
Washtenaw	1,347	232	4,894	1,079	525	143	39	8	81	7	89	5
Wayne	103	70	324	265	87	66	84	22	100	0	99	1
Wexford	1,252	287	4,885	1,331	437	175	35	11	57	12	87	8
Unknown	3,183	398	12,673	2,135	335	126	10	4	51	6	87	4

<sup>a</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

<sup>b</sup>Proportion of hunters that rated their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 4. Estimated number and proportion of hunters hunting on private and public lands during the spring 2013 Michigan turkey hunting season.<sup>a</sup>

Management unit	Private land only				Public land only				Both private and public lands				Unknown land			
	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL
Hunt periods with quotas (General limited quota hunt periods)																
A	1,413	132	72	6	349	99	18	5	201	79	10	4	0	0	0	0
E	718	70	65	6	291	61	26	5	87	37	8	3	16	17	1	1
F	1,270	163	51	6	941	153	38	6	260	94	10	4	33	35	1	1
J	1,000	116	63	6	295	83	19	5	262	81	17	5	26	28	2	2
K	3,235	375	58	6	1,495	317	27	6	737	241	13	4	99	94	2	2
M	2,231	281	65	7	639	195	19	6	532	182	16	5	19	37	1	1
ZA	1,217	184	48	7	921	171	37	6	339	118	13	5	40	43	2	2
ZB	438	73	43	7	489	74	48	7	74	37	7	4	12	15	1	2
ZC	483	104	37	7	710	114	54	8	85	50	6	4	28	29	2	2
ZD	11	1	63	8	6	1	31	8	1	1	6	4	0	0	0	0
ZE	400	84	32	6	711	94	57	7	128	54	10	4	7	14	1	1
ZF	1,528	248	49	7	1,209	234	39	7	318	139	10	4	74	70	2	2
PMH	1	0	33	0	0	0	0	0	2	0	67	0	0	0	0	0
Subtotal	15,085	633	57	2	8,119	542	31	2	3,060	392	11	1	354	143	1	1
Hunt 301 with quota (Private lands in Management Unit ZZ; April 22-May 5, 2013)																
ZA	6,562	474	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZB	2,722	329	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZC	4,038	391	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZD	409	133	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZE	6,630	475	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZF	5,878	455	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	570	158	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	26,268	395	100	0	0	0	0	0	0	0	0	0	0	0	0	0

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

Table 4 (continued). Estimated number and proportion of hunters hunting on private and public lands during the spring 2013 Michigan turkey hunting season.<sup>a</sup>

Management unit	Private land only				Public land only				Both private and public lands				Unknown land			
	Total	95% CL	95% %	95% CL	Total	95% CL	95% %	95% CL	Total	95% CL	95% %	95% CL	Total	95% CL	95% %	95% CL
Unlimited quota hunt period (Guaranteed Hunt 234; May 6-31, 2013)																
A	389	146	72	14	69	60	13	10	64	60	12	10	16	30	3	5
E	1,174	252	79	8	177	99	12	6	127	84	9	5	0	0	0	0
F	913	223	51	9	638	185	36	8	207	108	12	6	0	0	0	0
J	592	178	61	12	232	112	24	10	98	73	10	7	47	52	5	5
K	4,301	461	68	4	1,358	269	21	4	638	188	10	3	47	52	1	1
M	200	103	74	19	22	30	8	11	32	42	12	15	16	30	6	11
ZA <sup>b</sup>	5,482	513	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZB <sup>b</sup>	1,754	307	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZC <sup>b</sup>	2,284	345	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZD <sup>b</sup>	241	115	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZE <sup>b</sup>	4,340	462	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZF <sup>b</sup>	4,259	461	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	364	143	61	15	64	60	11	9	0	0	0	0	173	99	29	14
Subtotal	25,048	733	86	1	2,268	344	8	1	1,386	272	5	1	284	126	1	0

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

<sup>b</sup>Licenses for the unlimited quota hunt were valid only on private lands in Management Unit ZZ in southern Michigan (Figure 1).

<sup>c</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunts.



Table 4 (continued). Estimated number and proportion of hunters hunting on private and public lands during the spring 2013 Michigan turkey hunting season.<sup>a</sup>

Management unit	Private land only				Public land only				Both private and public lands				Unknown land			
	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL
Mentored hunts (youth hunters nine years old and younger could hunt during any open season)																
A	41	15	100	0	0	0	0	0	0	0	0	0	0	0	0	0
E	54	18	72	13	8	7	10	9	13	9	17	11	0	0	0	0
F	38	15	75	15	5	6	10	10	8	7	15	12	0	0	0	0
J	38	15	64	15	18	10	30	14	4	4	6	6	0	0	0	0
K	212	34	70	6	54	18	18	5	36	14	12	5	0	0	0	0
M	66	20	84	10	10	8	13	9	3	4	3	5	0	0	0	0
ZA	382	44	94	3	13	9	3	2	13	9	3	2	0	0	0	0
ZB	151	29	94	5	10	8	6	5	0	0	0	0	0	0	0	0
ZC	254	37	91	4	23	12	8	4	0	0	0	0	3	4	1	1
ZD	20	11	100	0	0	0	0	0	0	0	0	0	0	0	0	0
ZE	278	39	94	3	10	8	3	3	6	6	2	2	3	4	1	1
ZF	267	38	89	4	21	11	7	4	8	7	3	2	0	0	0	0
Unknown	13	9	63	26	3	4	13	18	0	0	0	0	5	6	25	23
Subtotal	1,731	61	87	2	146	29	7	1	99	24	5	1	10	8	1	0
Statewide <sup>c</sup>	66,959	1,048	81	1	10,468	642	13	1	4,512	478	5	1	682	196	1	0

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

<sup>b</sup>Licenses for the unlimited quota hunt were valid only on private lands in Management Unit ZZ in southern Michigan (Figure 1).

<sup>c</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunts.

Table 5. Status of turkey population reported by turkey hunters during the spring 2013 Michigan turkey hunting season.

Management unit	Turkey population status (% of hunters) <sup>a</sup>				
	Increasing	Decreasing	Stable	Unknown	No answer
Hunt periods with quotas (General limited quota hunt periods)					
A	10	43	30	17	0
E	14	27	40	19	0
F	11	29	31	26	3
J	14	27	42	16	1
K	11	32	40	16	1
M	15	38	30	16	1
ZA	15	21	41	22	1
ZB	22	13	43	21	1
ZC	18	16	39	25	1
ZD	25	0	13	44	19
ZE	16	10	48	25	1
ZF	20	21	40	16	2
Pure MI Hunt	0	0	33	67	0
Mean	15	27	38	19	1
Hunt 301 with quota (Private lands in Management Unit ZZ; April 22-May 5, 2013)					
ZA	18	21	49	11	1
ZB	25	14	46	14	1
ZC	19	16	50	13	2
ZD	35	0	47	19	0
ZE	23	18	47	12	1
ZF	18	22	48	12	0
Unknown	16	25	27	27	7
Mean	20	18	48	13	1

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

Table 5 (continued). Status of turkey population reported by turkey hunters during the spring 2013 Michigan turkey hunting season.

Manage- ment unit	Turkey population status (% of hunters) <sup>a</sup>				
	Increasing	Decreasing	Stable	Unknown	No answer
Unlimited quota hunt period (Guaranteed Hunt 234; May 6-31, 2013)					
A	12	42	24	19	3
E	16	18	48	16	1
F	9	43	23	24	1
J	19	24	37	20	0
K	13	34	36	16	0
M	12	25	32	31	0
ZA	15	21	48	16	0
ZB	22	15	46	16	1
ZC	13	17	53	17	0
ZD	33	7	34	27	0
ZE	19	17	48	15	1
ZF	15	22	47	15	1
Unknown	8	24	32	31	5
Mean	15	24	43	17	1
Mentored hunts (youth hunters nine years old and younger could hunt during any open season)					
A	6	44	19	31	0
E	24	17	28	31	0
F	0	25	35	35	5
J	13	30	32	26	0
K	9	25	40	25	1
M	23	13	42	23	0
ZA	13	20	37	29	1
ZB	17	8	54	21	0
ZC	23	15	37	26	0
ZD	38	13	50	0	0
ZE	22	11	37	27	3
ZF	15	11	44	30	0
Unknown	0	25	13	38	25
Mean	17	16	39	27	1
Statewide <sup>b</sup>	17	23	43	17	1

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

<sup>b</sup>Statewide mean interference levels (all hunts and periods).

Table 6. How hunters rated their hunting experience during the spring 2013 Michigan turkey hunting season.

Management unit	Satisfaction level (% of hunters) <sup>a</sup>					
	Excellent	Very good	Good	Fair	Poor	No answer
Hunt periods with quotas (General limited quota hunt periods)						
A	10	17	25	19	27	2
E	17	18	30	18	16	0
F	11	14	31	27	15	3
J	14	22	31	16	15	1
K	17	17	22	25	17	2
M	11	17	27	24	20	1
ZA	20	17	35	13	14	1
ZB	17	23	29	15	11	3
ZC	21	21	26	21	8	2
ZD	6	25	19	19	13	19
ZE	25	24	30	12	9	1
ZF	19	16	35	20	8	2
Pure MI Hunt	100	0	0	0	0	0
Mean	17	18	28	20	15	2
Hunt 301 with quota (Private lands in Management Unit ZZ; April 22-May 5, 2013)						
ZA	21	29	29	13	7	0
ZB	25	27	24	13	9	1
ZC	27	21	27	12	9	3
ZD	32	28	28	12	0	0
ZE	24	24	25	17	9	1
ZF	23	23	27	16	9	0
Unknown	9	20	24	31	13	2
Mean	24	25	27	15	9	1

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

Table 6 (continued). How hunters rated their hunting experience during the spring 2013 Michigan turkey hunting season.

2013 Michigan turkey hunting season.

Manage- ment unit	Satisfaction level (% of hunters) <sup>a</sup>					No answer
	Excellent	Very good	Good	Fair	Poor	
Unlimited quota hunt period (Guaranteed Hunt 234; May 6-31, 2013)						
A	12	12	16	33	24	3
E	14	23	27	20	15	1
F	12	14	23	25	25	1
J	15	25	24	19	17	0
K	14	21	29	19	17	0
M	13	25	12	42	7	0
ZA	19	21	31	17	12	1
ZB	20	19	28	24	8	0
ZC	16	28	29	17	9	1
ZD	40	13	33	7	7	0
ZE	24	26	25	18	6	1
ZF	19	18	33	18	11	0
Unknown	19	5	13	42	18	3
Mean	18	21	28	20	13	1
Mentored hunts (youth hunters nine years old and younger could hunt during any open season)						
A	13	19	38	13	13	6
E	21	24	31	21	3	0
F	40	35	10	10	0	5
J	32	26	26	4	13	0
K	25	17	31	18	8	2
M	23	13	32	26	6	0
ZA	27	23	27	17	7	0
ZB	26	19	36	11	8	0
ZC	30	19	33	14	5	0
ZD	13	38	13	38	0	0
ZE	37	20	26	12	3	2
ZF	28	25	26	17	3	0
Unknown	13	13	13	13	25	25
Mean	28	21	29	15	6	1
Statewide <sup>b</sup>	20	21	28	18	12	1

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

<sup>b</sup>Statewide mean satisfaction levels (all hunts and periods).

Table 7. Estimated amount of hunter interference experienced by turkey hunters during the spring 2013 Michigan turkey hunting season.

Manage-ment unit	Interference level (% of hunters) <sup>a</sup>				
	None	Minor	Some irritation	Major problem	No answer
Hunt periods with quotas (General limited quota hunt periods)					
A	77	17	6	1	0
E	72	22	6	0	0
F	65	24	7	2	2
J	67	24	5	3	2
K	62	26	8	3	1
M	76	15	5	2	2
ZA	70	19	9	2	1
ZB	56	30	11	2	1
ZC	54	27	16	2	1
ZD	63	19	0	0	19
ZE	64	19	11	4	1
ZF	55	33	8	2	1
Pure MI Hunt	100	0	0	0	0
Mean	66	23	8	2	1
Hunt 301 with quota (Private lands in Management Unit ZZ; April 22-May 5, 2013)					
ZA	73	18	7	1	0
ZB	66	22	8	3	1
ZC	71	17	9	1	2
ZD	78	12	10	0	0
ZE	70	20	8	2	1
ZF	72	18	8	2	0
Unknown	73	16	9	0	2
Mean	71	18	8	2	1

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

Table 7 (continued). Estimated amount of hunter interference experienced by turkey hunters during the spring 2013 Michigan turkey hunting season.

Management unit	Interference level (% of hunters) <sup>a</sup>				
	None	Minor	Some irritation	Major problem	No answer
Unlimited quota hunt period (Guaranteed Hunt 234; May 6-31, 2013)					
A	85	3	6	3	3
E	78	16	2	1	2
F	79	15	5	1	0
J	75	17	7	2	0
K	74	16	9	1	1
M	92	7	0	0	0
ZA	78	14	7	1	0
ZB	77	17	5	1	0
ZC	80	17	3	0	1
ZD	60	33	7	0	0
ZE	78	14	5	3	1
ZF	73	17	7	1	0
Unknown	58	18	13	5	5
Mean	76	16	6	1	1
Mentored hunts (youth hunters nine years old and younger could hunt during any open season)					
A	81	13	6	0	0
E	72	17	3	7	0
F	80	5	10	0	5
J	87	9	4	0	0
K	82	11	4	2	1
M	84	10	6	0	0
ZA	78	13	9	0	0
ZB	68	28	3	0	0
ZC	67	21	11	1	0
ZD	88	13	0	0	0
ZE	81	9	5	3	1
ZF	77	17	5	1	0
Unknown	50	13	0	13	25
Mean	77	15	6	1	1
Statewide <sup>b</sup>	71	19	7	2	1

<sup>a</sup>Row totals may not equal 100% because of rounding errors.

<sup>b</sup>Statewide mean interference levels (all hunts and periods).

Table 8. Estimated number of hunting efforts, hunters, hunting success, noninterfered hunters, and hunter rating of the 2013 spring turkey hunting season, by hunt periods.

Variable	Hunt periods beginning								All periods <sup>a</sup>	
	April 22		April 29		May 6		May 13			
	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL
Hunting efforts (days)	164,634	4,806	21,177	1,901	148,287	6,424	7,015	1,245	341,113	7,972
Number of hunters	43,052	713	6,225	473	31,736	744	1,608	206	82,621	929
Successful hunters (n)	17,890	727	1,906	314	11,544	690	592	135	31,931	1,036
Successful hunters (%)	42	2	31	4	36	2	37	7	39	1
Noninterfered hunters (n) <sup>b</sup>	38,456	762	5,479	458	29,108	774	1,463	201	74,507	1,036
Noninterfered hunters (%) <sup>b</sup>	89	1	88	3	92	1	91	3	90	1
Favorable rating (n) <sup>c</sup>	30,260	789	3,793	406	21,280	799	1,203	185	56,535	1,130
Favorable rating (%) <sup>c</sup>	70	1	61	5	67	2	75	6	68	1

<sup>a</sup>Row totals may not equal totals for all periods because of rounding errors.

<sup>b</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

<sup>c</sup>Hunters rating their hunting experience as excellent, very good, or good.



Table 9. Comparison of the estimated number of hunters, hunting effort, and harvest between 2012 and 2013 Michigan spring turkey hunting seasons, summarized by regions.

Region <sup>a</sup>	Hunters (No.) <sup>b</sup>					Hunting efforts (days)					Harvest (No.)				
	2012		2013		Change (%)	2012		2013		Change (%)	2012		2013		Change (%)
	Total	95% CL	Total	95% CL		Total	95% CL	Total	95% CL		Total	95% CL	Total	95% CL	
UP	3,183	237	3,537	284	11	18,551	2,935	18,056	2,680	-3	988	208	1,155	245	17
NLP	23,249	700	23,603	744	2	94,084	4,580	93,971	4,793	0	7,472	550	7,583	578	1
SLP	52,861	872	53,133	918	1	211,209	6,449	216,413	6,584	2	22,571	834	22,859	859	1
Unknown	3,581	404	3,183	398		14,649	2,404	12,673	2,135		346	127	335	126	
Total	82,297	866	82,621	929	0	338,493	7,921	341,113	7,972	1	31,377	998	31,931	1,036	2

<sup>a</sup>Regions included the Upper Peninsula (UP), the Northern Lower Peninsula north of Management Unit ZZ (NLP), and Management Unit ZZ in the Southern Lower Peninsula (SLP).

<sup>b</sup>Number of hunters did not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

\*P<0.005.

Table 10. Comparison of estimated hunter success, hunter satisfaction, and hunt interference between 2012 and 2013 Michigan spring turkey hunting season, summarized by regions.

Region <sup>a</sup>	Hunter success					Hunter satisfaction <sup>b</sup>					Noninterfered hunters <sup>c</sup>				
	2012		2013		Difference (%)	2012		2013		Difference (%)	2012		2013		Difference (%)
	%	95% CL	%	95% CL		%	95% CL	%	95% CL		%	95% CL	%	95% CL	
UP	31	6	33	6	2	56	7	56	7	-1	91	4	93	4	2
NLP	32	2	32	2	0	58	2	60	2	2	91	1	90	1	-1
SLP	43	1	43	1	0	70	1	74	1	4*	91	1	90	1	-1
Total	38	1	39	1	1	65	1	68	1	3*	91	1	90	1	0

<sup>a</sup>Regions included the Upper Peninsula (UP), the Northern Lower Peninsula north of Management Unit ZZ (NLP), and Management Unit ZZ in the Southern Lower Peninsula (SLP).

<sup>b</sup>Hunters rating their hunting experience as excellent, very good, or good.

<sup>c</sup>Proportion of hunters that indicated they experienced no or only minor interference from other hunters.

\*P<0.005.

Table 11. Number of turkeys harvested and hunter success, summarized by hunting device, during the spring turkey hunting season in Michigan, 2010-2013.

Year	Number of turkey harvested by device								Hunter success by device <sup>a</sup>					
	Firearm		Crossbows		Other bows <sup>b</sup>		Unknown		Firearm		Crossbows		Other bows <sup>b</sup>	
	95%		95%		95%		95%		95%		95%		95%	
	Total	CL	Total	CL	Total	CL	Total	CL	%	CL	%	CL	%	CL
2010	34,984	1,093	525	161	1,519	279	22	32	41	1	20	6	20	3
2011	28,831	1,017	590	170	1,143	228	23	34	37	1	17	5	17	3
2012	29,611	984	650	172	1,055	214	62	57	39	1	17	4	18	3
2013	29,875	1,018	892	202	1,071	225	93	79	39	1	22	5	18	4

<sup>a</sup>Hunters harvesting a turkey.

<sup>b</sup>Included longbows, recurve, and compound bows.



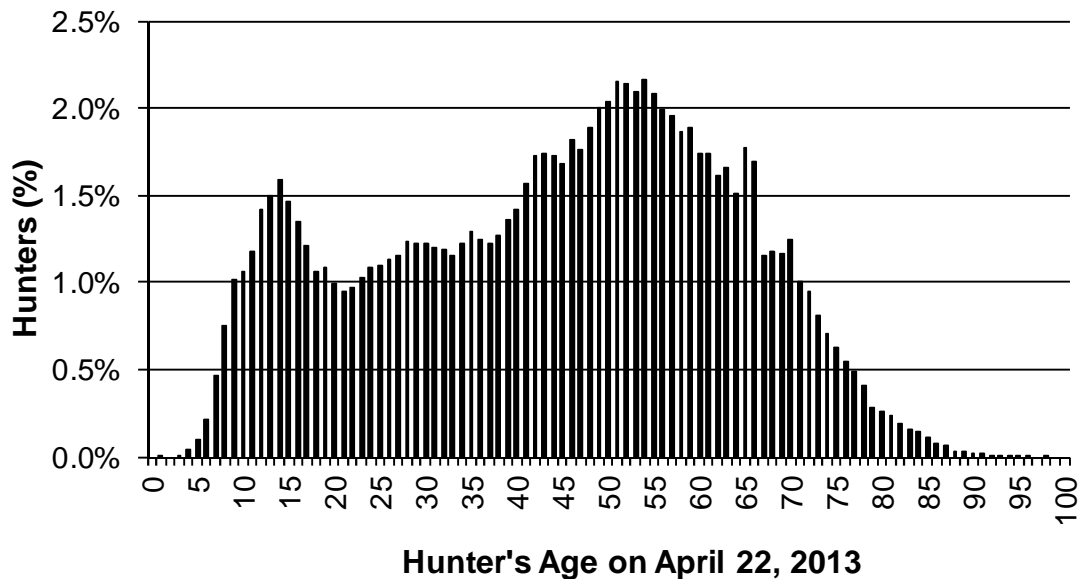


Figure 2. Age of people that purchased a turkey hunting license in Michigan for the 2013 spring hunting season ( $\bar{x} = 44$  years). Licenses were purchased by 104,279 people.

□ 2003 ■ 2013

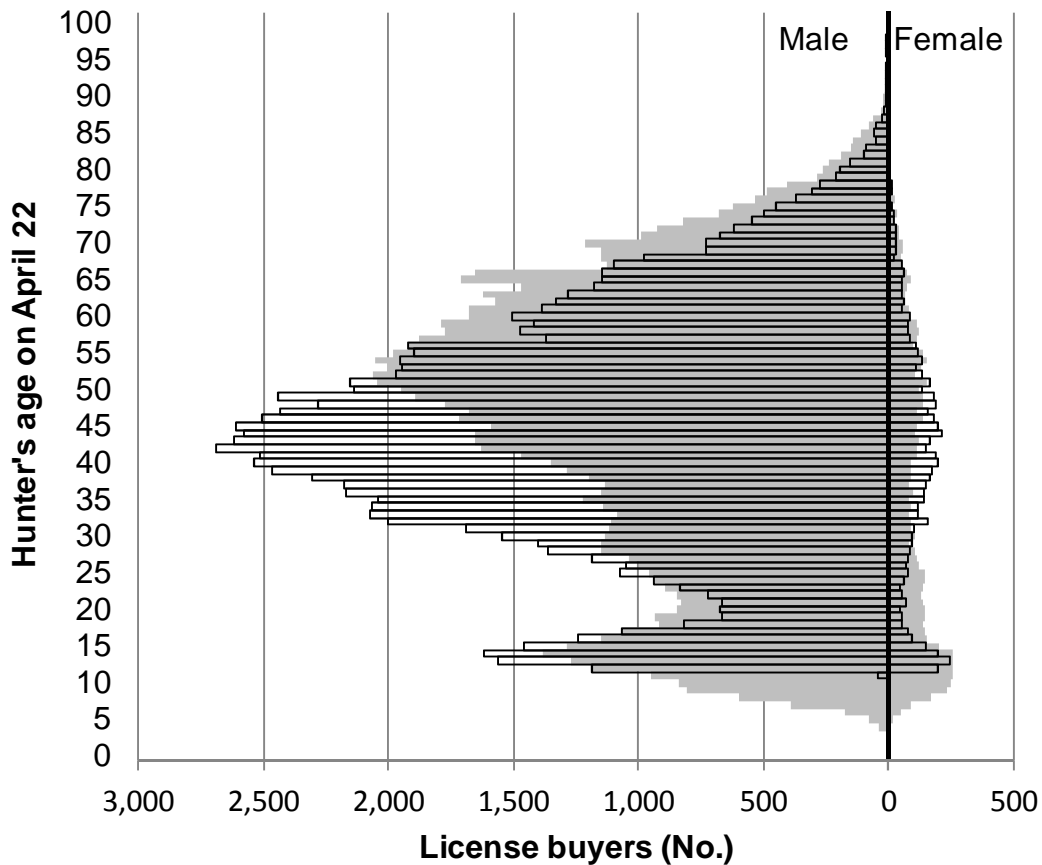


Figure 3. Number of spring turkey hunting license buyers in Michigan by age and sex during 2003 and 2013 hunting seasons. The number of people buying a license was 107,866 in 2003 and 104,279 in 2013.

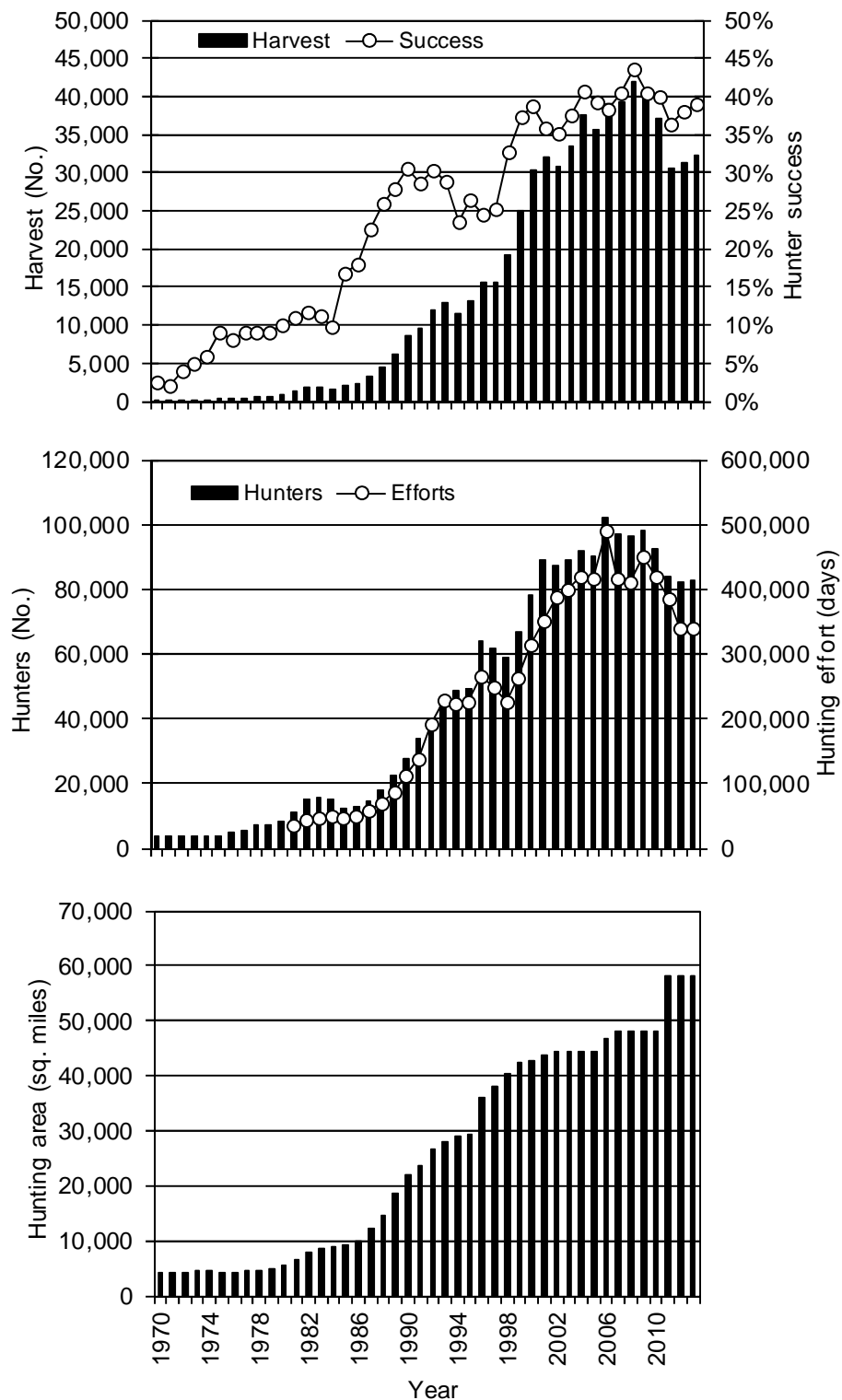


Figure 4. Estimated number of hunters, harvest, hunting efforts, hunter success, and area open to hunting during the Michigan spring turkey hunting season, 1970-2013. Estimates of hunting effort generally were not available before 1981.

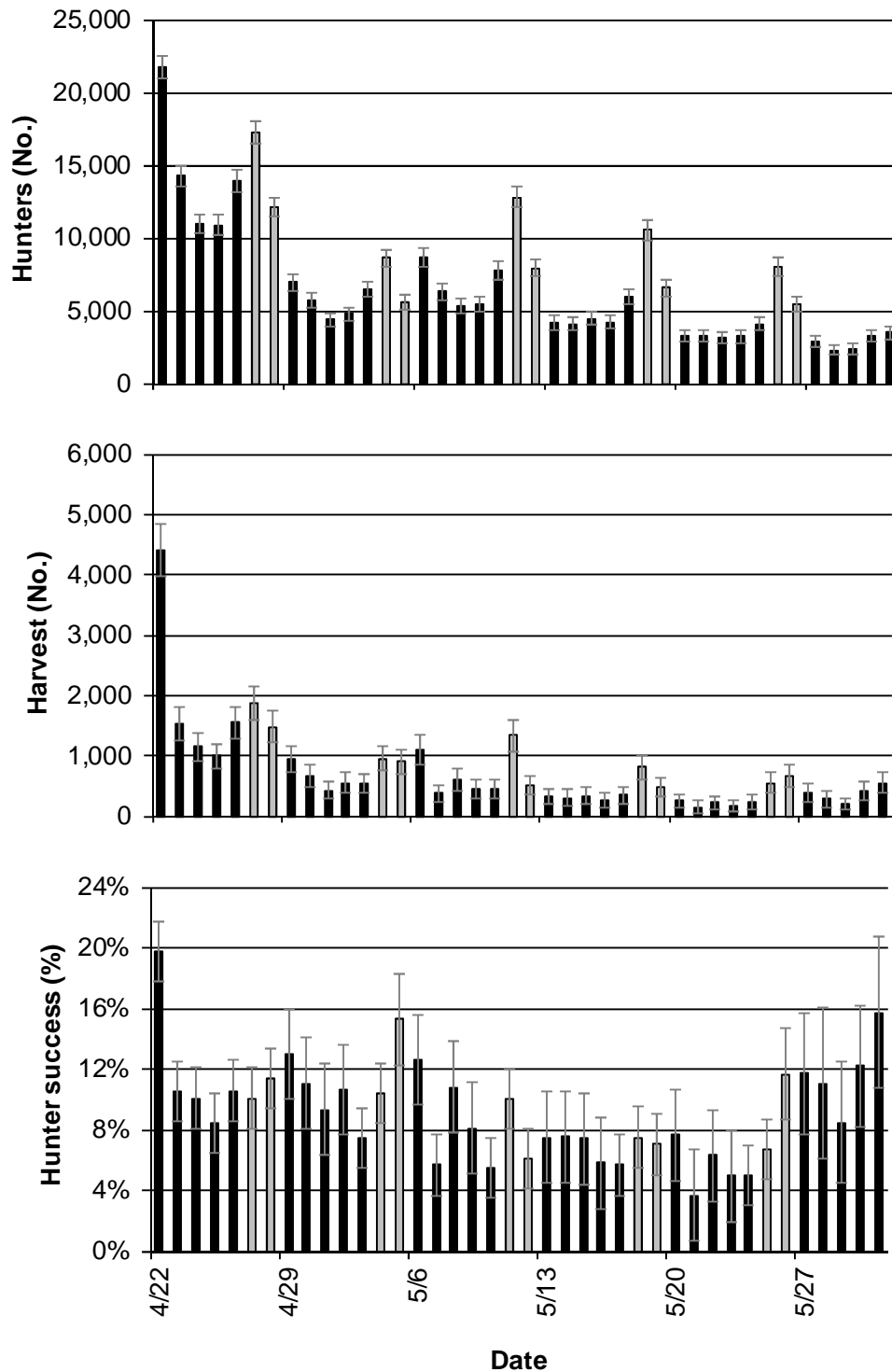


Figure 5. Estimated number of hunters, harvest, and hunter success by date during the 2013 Michigan spring turkey hunting season (includes all hunts). An additional  $2,983 \pm 380$  birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

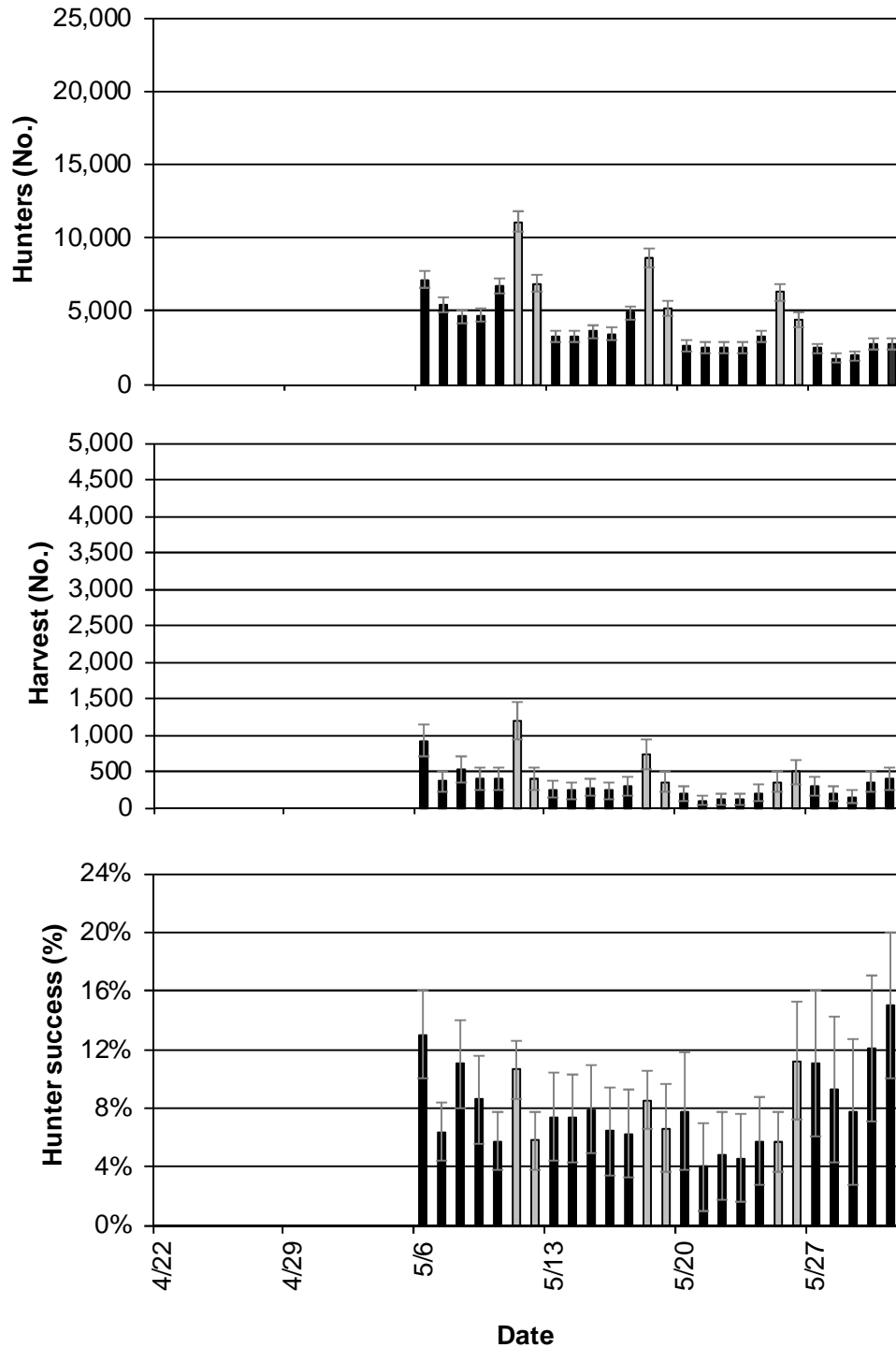


Figure 6. Estimated number of hunters, harvest, and hunter success by date during Hunt 234 of the 2013 Michigan spring turkey hunting season (May 6-31). An additional  $1,521 \pm 275$  birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

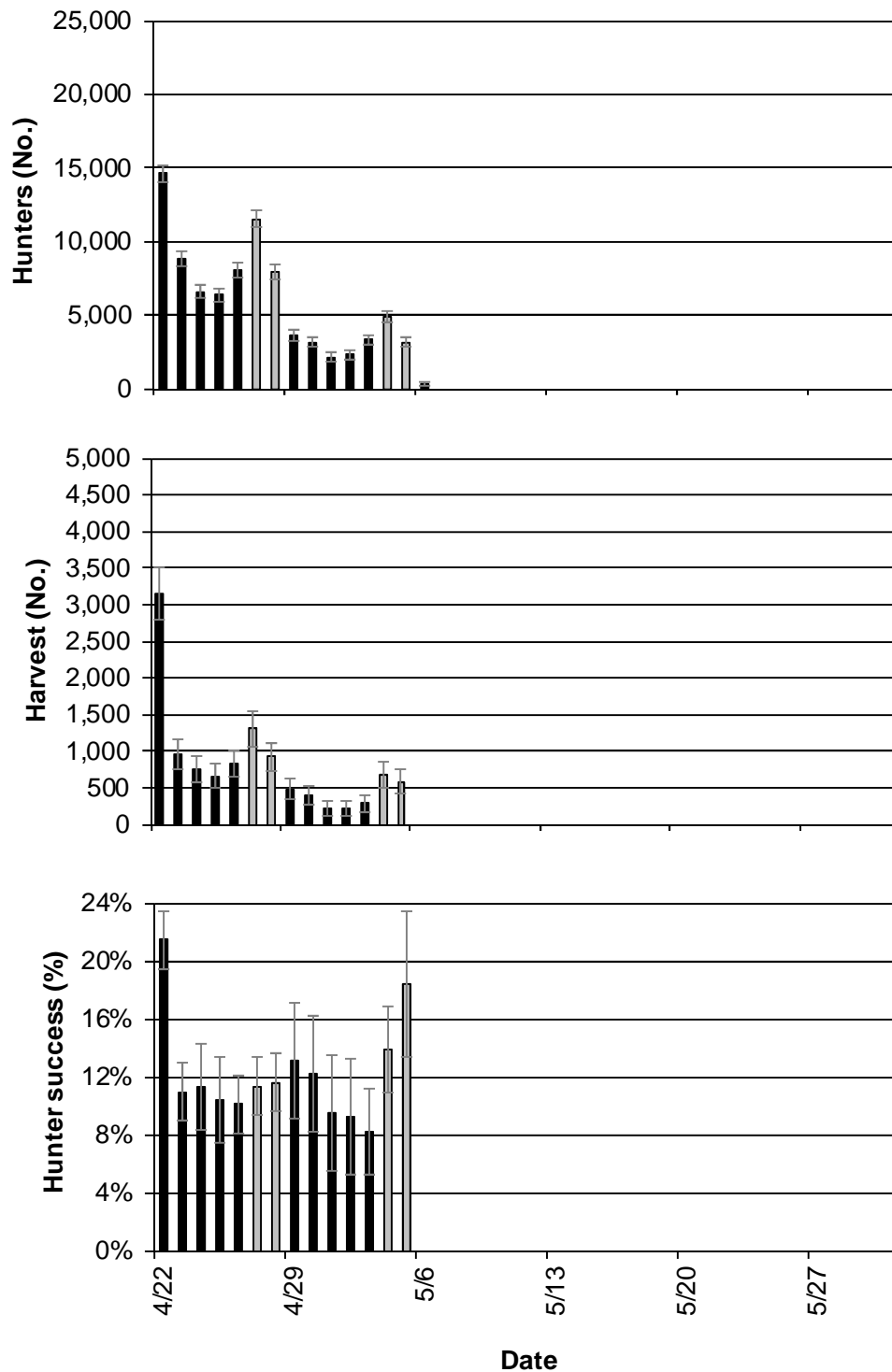


Figure 7. Estimated number of hunters, harvest, and hunter success by date during Hunt 301 of the 2013 Michigan spring turkey hunting season (April 22-May 5). An additional  $968 \pm 203$  birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.



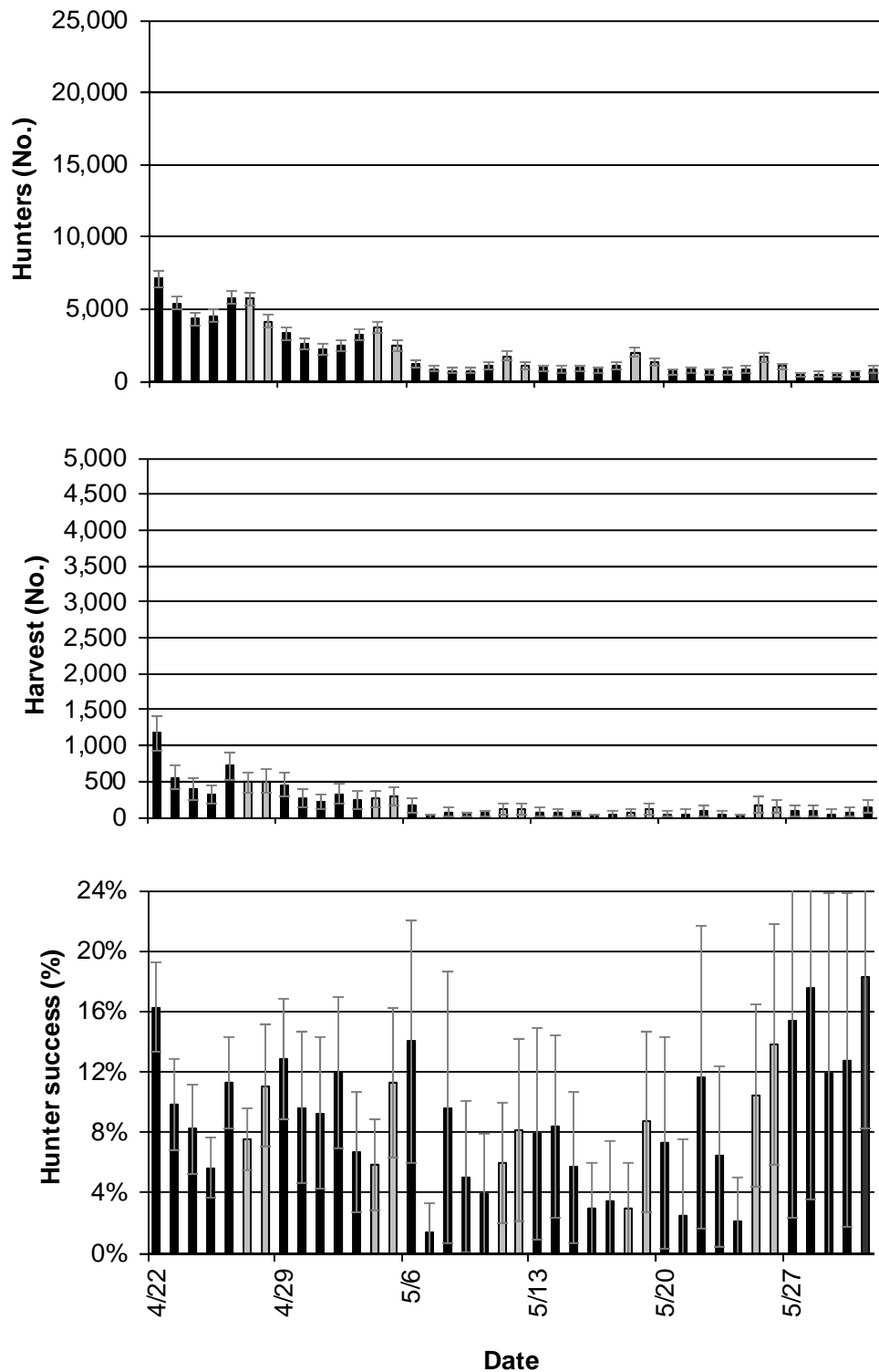


Figure 8. Estimated number of hunters, harvest, and hunter success by date during all hunts, except for mentored youth hunts and hunts 234 and 301 of the 2013 Michigan spring turkey hunting season. An additional  $480 \pm 167$  birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

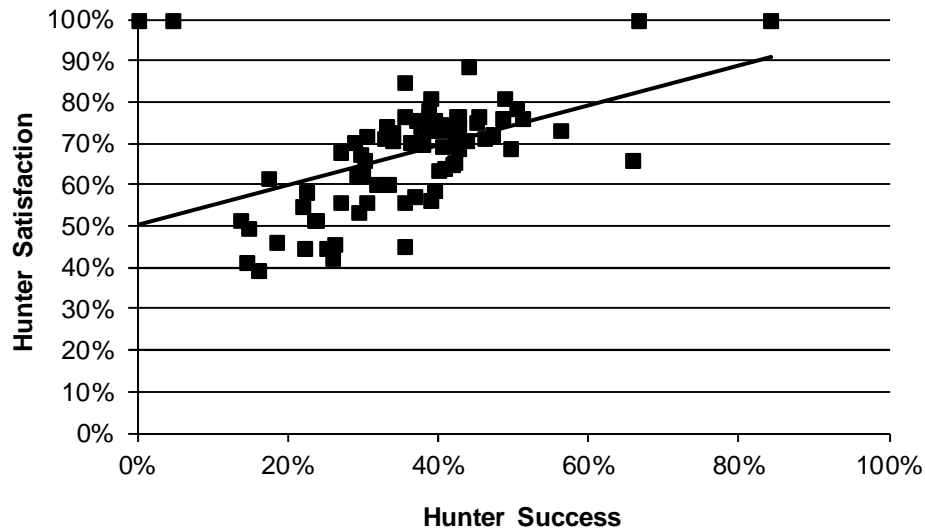


Figure 9. Relationship between hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) and hunter success for each of 78 counties in Michigan during the 2013 spring turkey hunting season (included only counties with at least 30 hunters).

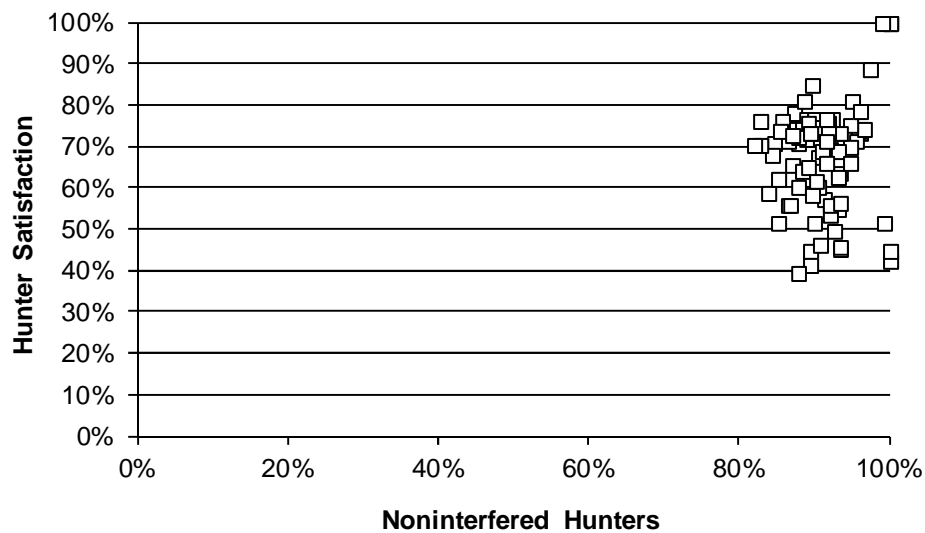


Figure 10. Relationship between hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) and hunter interference for each of 78 counties in Michigan during the 2013 spring turkey hunting season (included only counties with at least 30 hunters). Noninterfered hunters were the proportion of hunters that indicated that they experienced no or only minor interference from other hunters.